

sisting in fact of two separate tables of contents, one giving a list of the subjects treated of in the order in which they occur in the subsequent pages; whilst the other or "Physiological Index" takes the different organs or their functions as the basis of its arrangement, and furnishes references to the particular paragraphs in which their nature in the various groups of animals is described, thus enabling the reader to trace any one function or organ from its first appearance to its full development.

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## PROCEEDINGS OF LEARNED SOCIETIES.

### ZOOLOGICAL SOCIETY.

May 8, 1855.—G. R. Waterhouse, Esq., in the Chair.

Mr. Gould exhibited a portion of a collection of birds formed by Mr. Hauxwell in a district lying on the eastern side of the Peruvian Andes, in the neighbourhood of the River Ucayali, one of the tributaries of the Upper Amazon. Mr. Gould observed, that the exploration of this particular district had been one of the earliest objects of his own ornithological ambition, but that until within the last few years no naturalist had visited it. The splendid collection sent by Mr. Hauxwell, of which the birds exhibited to the Meeting formed a part, fully bore out the anticipations entertained by Mr. Gould, that when explored it would prove one of the richest and most interesting ornithological districts with which we are acquainted.

Amongst the birds exhibited were some *Cotingas*, differing from the ordinary species found in the lower countries of Brazil, and remarkable from the splendour of their colouring, together with species of *Phaenicercus*, *Rhamphocelus*, &c., of the most dazzling brilliancy. As a contrast to these, Mr. Gould exhibited a series of dull-coloured *Thamnophili*, also contained in this collection, and remarked that this striking difference in the coloration of birds inhabiting the same locality was due almost entirely to their different degrees of exposure to the sun's rays; the brilliantly coloured species being inhabitants of the edges of the forests, where they fly about amongst the highest branches of the trees, whilst the others form a group of short-winged insectivorous birds, which inhabit the low scrub in the heart of the dense humid jungle, where the sun's rays can rarely, if ever, penetrate.

Mr. Gould also remarked, that the colours of the more brilliant species from the banks of the Ucayali, a district situated towards the centre of the South American continent, were far more splendid than those of the species representing them in countries nearer to the sea, and from this circumstance he took occasion to observe that birds from the central parts of continents were always more brilliantly coloured than those inhabiting insular or maritime countries. This rule applies equally to birds of the same species, the Tits of Central Europe being far brighter in colour than British specimens. Mr.

Gould had observed that the like difference existed between specimens of the same species inhabiting Van Diemen's Land and the continent of Australia. He attributed this principally to the greater density and cloudiness of the atmosphere in islands, and countries bordering the sea; and in further illustration of the influence of light upon colour, he stated, that the dyers of this country are never able to produce tints equal in brilliancy to those obtained by their continental rivals, and that in England they never attempt to dye scarlets in cloudy weather.

DESCRIPTION OF A NEW SPECIES OF *RUTICILLA* FROM  
ERZEROUM. BY JOHN GOULD, F.R.S. ETC.

*RUTICILLA ERYTHROPROCTA*, Gould.

Forehead black; crown of the head clouded silvery-grey; back, shoulders, throat, chest, and the upper part of the abdomen, jet-black; lower part of the abdomen, upper and under tail-coverts dull red; tail-feathers dull red, except the two middle ones, which are brownish-black; wings both above and beneath brownish-black; some of the secondaries slightly fringed with silvery-grey; bill and feet black.

Total length,  $5\frac{1}{2}$  inches; bill,  $\frac{5}{8}$ ; wing,  $3\frac{1}{4}$ ; tail,  $2\frac{5}{8}$ ; tarsi,  $\frac{7}{8}$ .

*Hab.* Erzeroum.

*Remark.*—Nearly allied to, and about the size of, *R. Tithys*; but differing from that species in the under surface of the shoulder being darker, and the lower part of the abdomen being red instead of greyish-white.

In my own collection.

NOTES ON THE BIRDS OF WESTERN INDIA.  
BY LIEUT. BURGESS.

Family RALLIDÆ.

Genus *FULICA*, L.

*FULICA ATRA*. BALD COOT.

I found some of these birds breeding on the Singwa tank, situated about eighteen miles north of the station of Ahmednuggur, on 21st August, 1849. I obtained three eggs and three nestlings, which were marked as follows: head, neck, breast and back covered with bright orange-red, hair-like feathers; beak crimson, tip white; lower part of the back dark lead-colour, nearly black; near the beak the face was covered with bright scarlet pustules; irides brown; legs and feet dark lead-colour. The young birds swam with surprising rapidity. I was attracted at first by the unusual movements of the old birds, who swam backwards and forwards with great swiftness at some distance from the nest, showing great uneasiness, and when I was handling their young appeared quite distracted.

The egg is rather more than  $2\frac{1}{10}$  in. in length, by nearly  $1\frac{5}{10}$  in. in width, of a stone-colour, spotted with numberless small specks of brown, and some larger spots of dark brown and grey.

## Family SCOLOPACIDÆ.

## Genus SCOLOPAX.

## Subgenus RHYNCHEÆ (Cuv.).

## RHYNCHEÆ PICTA (Gray). PAINTED SNIPE.

I quite think that the Painted Snipe breeds in the Deccan, or at least some few of them, as I have had both male and female birds sent to me in the middle of July, which were shot near Ahmednugur. The female was in remarkably rich and beautiful plumage. It is very probable that some breed annually in the rushy grounds bordering the large tank at Singwa.

## Subgenus SCOLOPAX.

## SCOLOPAX NEMORICOLA. SOLITARY SNIPE of the Neilgherries.

Dr. Jerdon in his Catalogue says, "It is a rare visitant to the Neilgherries during the cold season, and has not, as far as I am aware, been killed elsewhere in the Peninsula." I believe the Snipe mentioned in the following note, which I made at Nassick, to be the same bird:—

"Solitary, or rather, a very large Snipe, shot at Nassick by Lieut. Boddam of the Engineers: a very fine specimen; the plumage of a very dark dim colour, and the tints on the scapulars not very bright. Shot 5th January, 1847."

## Family CHARADRIADÆ.

## Genus CHARADRIUS.

## CHARADRIUS PLUVIALIS. GOLDEN PLOVER, L.

I have never met with this Plover in the Deccan, but shot them on the sandy plains near Kurachee in Scinde. Dr. Jerdon says, that it "is but rarely met with in the Peninsula. I have only seen it on two or three occasions on the banks of large rivers on the table-land, and on grass plains near the sea-coast, usually in small flocks of five or six. I have seen specimens killed in the neighbourhood of Madras in the breeding plumage, viz. with the whole under surface of the body deep black. It therefore most probably breeds in this country."

## CHARADRIUS MINOR, Wagl. LESSER RINGED PLOVER.

I believe the egg sent with this paper to be that of the Lesser Ringed Plover; if so, this bird breeds in the Deccan in the month of April, laying its eggs on sand-banks in the middle of the larger rivers. The egg forwarded was from a sand-bank in the river Bheema. These pretty little lively birds are common in the Deccan, resorting to the beds of streams and sandy shallows and banks of rivers. They are difficult birds to shoot, being very restless, continually taking short flights, and running about with great activity along the water's edge; their food consists of worms, small shells

and grass; they lay as many as three eggs I believe; the eggs are deposited on the bare sand. The egg is rather more than  $1\frac{1}{10}$  in. in length, by  $\frac{8}{10}$ ths of an inch in width, of a rich stone colour, spotted and streaked with grey and two shades of brown.

Genus VANELLUS.

VANELLUS BILOBUS (Gmel.). YELLOW WATTLED LAPWING.

I have had frequent opportunities of seeing this Lapwing on the open bare plains which it frequents, and have obtained specimens, but never to my knowledge succeeded in procuring its eggs, though I have had the eggs of Plovers brought to me in numbers. Dr. Jerdon says, "I found the eggs of this bird on one occasion on a grass plain on the west coast in the month of September; they were of a light salmon colour with dusky spots, four in number, and laid on a slight depression of the ground." This Lapwing utters a plaintive cry when on the wing; it feeds on small beetles, white ants, &c., picking up small pieces of stone or crystal to assist the action of the gizzard.

VANELLUS GOENSIS (Lath.). RED WATTLED LAPWING.

This common Lapwing is as partial to water as the last-mentioned is to dry sandy plains; indeed I do not recollect ever to have seen it at any distance from water. It is very common in the Deccan, and may be easily recognized by its oft-repeated cry of—"Dick did *you* do it—Dick, Dick did *you* do *it*." As soon as March has well set in they pair, and the female commences laying; she generally chooses the banks of rivers and small streams. On a sand-bank in the midst of the river Bheema, one of the large rivers of the Deccan, I fell in with the nest of this bird—if a small heap of dry gravel with a hollow in it can be called a nest—it contained four eggs. During the breeding season these birds, vociferous at all times, become doubly so, acquainting every one with the fact that their nest is near. I have had their eggs brought to me as late as 19th May. On the 27th May a man brought me three young ones, apparently just released from their imprisonment; their plumage was as follows:—Irides dark hazel; wattles dark brown, nearly black; the whole body covered with down, that on the head and neck brown with spots of black; the front of the neck, breast and belly white; a black streak runs along the sides from the wing to the tail; on the nape of the neck there was a black patch, and another cravat-shaped patch of black on the fore part of the neck and throat; legs and feet dark lead colour.

This Lapwing, like many of the Sandpipers, has a curious fashion of elevating and throwing forward the head, much like the motion of bowing. It is equally active by night as by day, filling the air with its taunting cry of "Did *you* do it." If you should fire at and miss one of them, he goes off with, and his companions fly round you with the insulting cry of "Did you do it;" or, as Dr. Jerdon has it, "Pity to do it." The food of this bird consists of grass and

small insects; it also picks up small pieces of crystal to help digestion. The egg varies much in size; one sent measures  $1\frac{8}{10}$  in. in length, by rather more than  $1\frac{2}{10}$  in. in width, of a yellow stone colour, spotted and dashed with grey and dark sepia.

#### Genus *ÆDICNEMUS* (Cuv.).

##### *ÆDICNEMUS CREPITANS*. THICK-KNEED PLOVER.

This bird is tolerably common amongst the stony hills and undulating grounds of the Deccan. It is more active by night than by day, at which time its plaintive call is heard. I had for some time a young bird in my tent; during the day it used to remain quiet, but when evening began to draw on its restlessness commenced, and it used to run round and round the tent with great rapidity, uttering a single sharp querulous note. The Thick-knee feeds on small beetles and other insects, as also small particles of grass, taking down small stones to help the action of the gizzard, which is of a strong texture. They breed during the months of March and April, laying two eggs varying in colour, 2 in. in length, by rather more than  $1\frac{4}{10}$  in. in width, of a stone colour, blotched and spotted with dark sepia-brown, and a few under spots of dark grey. In some eggs the blotches are more of an olive-brown.

##### *ÆDICNEMUS RECURVIROSTRIS* (Swains.).

On the 5th April, 1849, I found two young birds of what I then took to be the young of *Ædic. crepitans*, on a large sand-bank in the middle of the river Bheema. At the same time I thought it a very strange place for a bird found in dry stony places to breed in. In March 1850, I shot a specimen of *Ædicnemus recurvirostris* on the same river, some distance higher up; I therefore think it most probable that they were the young of *Ædic. recurvirostris*, and not of *Ædic. crepitans*. Had I, at the time I found them, known that the former bird was to be found on that river, I should have examined carefully the shape of the bill. The testes in the male specimen shot in March were in a turgid state. I brought away the young birds above mentioned; one was much smaller than the other, but much more active. They were both, if I remember right, covered with a greyish down. For fear of their dying through not getting proper food, I returned them to their sandy hollow the next day. The gizzard of the full-grown bird contained the bones of some small animal.

#### Genus *TACHYDROMUS*.

I believe the egg now exhibited to be that of the Courier Plover, *Tachydromus Asiaticus*. Two of them were found in a field in a slight hollow of the ground in the month of April. Of the breeding of this bird Dr. Jerdon says—"It breeds in the more retired spots during the hot weather, laying three eggs of a pale greenish-yellow colour, much blotched and spotted with black, and also with a few

olive spots; they are deposited in a slight hollow." The Courier is abundant on the plains of the Deccan, frequenting sandy bare spots in flocks; they have a peculiar habit of running for a distance at great speed, then suddenly stopping and erecting the body, then starting off as before.

### Subgenus GLAREOLA.

#### GLAREOLA ORIENTALIS (Leach).

I came across this pretty little Pratincole when shooting on a stony bank in the river Bheema. There were numbers of them flying about like swallows, and as they mobbed me, I concluded that they had nests, but though I made most diligent search could not find any. I procured a pair of birds: the eggs in the ovaries of the female were large: the crop of the female was filled to a great size with a species of small black beetle. This occurred in the month of March.

May 22, 1855.—Dr. Gray, F.R.S., in the Chair.

#### DESCRIPTIONS OF FOUR NEW OR LITTLE-KNOWN TANAGERS.

By PHILIP LUTLEY SCLATER, M.A.

##### 1. ARREMON ERYTHORHYNCHUS, Sclater.

*A. olivaceus*: capite nigro; vitta mediali verticis, nucha cervicisque lateribus cinereis; superciliis et corpore subtus albis: torque gutturali angusta nigra: lateribus cinerascentibus: campterio flavo: pedibus albis: rostro elongatiore, incurvo, rubro.

Long. tota 5·8, alæ 3·0, caudæ 2·7.

*Hab.* in Nova Grenada, Bogota.

I have to thank Mr. Gould for allowing me to describe this new *Arremon*, which is from his collection. It is closely allied to my *Arremon spectabilis* (P. Z. S. 1854, p. 114. pl. 67) from Quixos, but may be distinguished by its more lengthened incurved and brilliant orange red-bill, and the yellow bend of the wing.

##### 2. TACHYPHONUS XANTHOPYGIUS, Sclater.

*Tachyphonus xanthopygius*, Sclater, P.Z.S. 1854, p. 158. pl. 69 (♀).  
*Lanio auritus*, DuBus, Bull. Ac. Brux. Feb. 1855 (♂ et ♀).

♂ *niger*: tergo flavo: fascicula post-superciliari coccinea: carpo summo dilute flavo: tectricibus subalaribus albis.

Long. tota 6·1, alæ 3·5, caudæ 2·5.

♀ *nigro-cinereus*, subtus dilutior; axillis et tectricibus subalaribus albis: tergo flavo.

*Hab.* in Nova Grenada, Bogota.

I described the female of this fine Tanager at the meeting of this Society on the 25th of July last year. M. Parzudaki of Paris has lately received several examples of both sexes from Bogota. A pair of these passed into the hands of the Vicomte DuBus, by whom they were characterized as new in the *Bulletins de l'Académie Royale*

de Belgique\* for February last. A male bird from the same quarter has been kindly entrusted to me for examination before being deposited in the British Museum, where the female I originally named is also to be found. I cannot agree with the Vicomte DuBus in considering this species a *Lanio*, but, after seeing the male, am the more convinced that it is a true *Tachyphonus*.

### 3. TANAGRA NOTABILIS, Jardine.

*T. flavo-olivacea*: capite undique et mento nigris, macula nuchali triangulari, a dorso linea nigra divisa, flava: alis nigris cæruleo marginatis, tectricibus autem summis dorso concoloribus: cauda nigra, margine vix cærulescente: subtus læte aurantio-flava; rostro pedibusque nigris.

Long. tota 7·2, alæ 3·7, caudæ 3·0.

*Hab.* in rep. Equatoriana.

Sir William Jardine has been so good as to lend me the types of this and the following species of Tanagers for examination. They were lately procured by Professor Jameson of Quito, during a botanical excursion along the eastern range of Cordilleras to the north of Quito, and are to be described with other rare birds, the product of the same or similar expeditions, in the forthcoming number of the new series of the Edinburgh New Philosophical Journal.

The present bird is a most brilliant fourth of the little section denominated *Compsocoma* by Cabanis, easily distinguished from the others by its yellow-olive back, triangular nape-spot, black chin and orange-yellow under-plumage, and may be therefore called *Compsocoma notabilis*, if that name is used generically. The other three species of this group are—(1) *Compsocoma victorini*, with its dark olive back and elongated nape-stripe, which is common in collections from Bogota; (2) *C. sumptuosa* (Arch. du Musée Paris., vii. p. 379. pl. 23), with the back black and uropygium olivaceous, from Trans-andean Ecuador—the same locality as the present—and Peru; and (3) *C. flavinucha*, a rare species in collections, which seems confined to Bolivia, where d'Orbigny discovered it on the eastern slope of the Andes of the province of La Paz.

### 4. SALTATOR ARREMONOPS, Jardine.

*S. rufo-brunneus, olivaceo parum tinctus, pectore multo clariore et rubescentiore: capite toto mentoque nigris; vitta mediali verticis et superciliari utrinque postice elongatis cum medio ventre cinereis: alis intus et cauda nigricantibus: rostro et pedibus nigris.*

Long. tota 7·25, alæ 3·2, caudæ 3·5.

*Hab.* in rep. Equatoriana.

This peculiar Tanager in style of plumage and general habit cor-

\* The article is entitled "Note sur quelques espèces inédites d'Oiseaux." The *Nemosia torquata* therein described (sp. 10) is my *Dacnis pulcherrima*, Rev. et Mag. de Zool. 1853, p. 480—(a true *Dacnis* to my mind); and, is not *Vireosylva frenata*, DuBus, sp. 1, the same as *V. alliloqua*, Vieill.—Cassin, Birds of Cal. pl. 37. p. 221—and *Phyllomanes mystacalis*, Cab. Wieg. Arch. 1844, p. 348?

responds most closely with the members of the genus *Arremon*, but the bill is altogether abnormal, the upper mandible swelling in the middle and overlapping the under, as in the genus *Lanio*, though not developed into a decided hook. But the bill is much shorter, broader and deeper than in the last-named genus, and has more general resemblance to that of some of the *Saltatores*. The wings are very short, but the only skin sent belonging to a bird in moult, the comparative length of the remiges cannot be determined.

#### DESCRIPTION OF A NEW SEA ANEMONE.

BY E. W. H. HOLDSWORTH, F.Z.S.

The species now to be described must be separated from the true *Actiniæ*, and may be well placed in the genus *Scolanthus*, which was proposed by Mr. Gosse for the reception of an animal obtained by him at Weymouth, and which presented the very distinctive characters of a perforated base, and the absence of a terminal adhesive disk. A description of that species will be found in the 'Annals of Natural History' for the year 1853, p. 157. These points of difference are accompanied, as might be expected, by a variation in habits, and the members of the genus will be found living buried in mud or sand, into which they retire on being alarmed, their extraordinary powers of inversion enabling them to hide at some little distance below the surface.

#### SCOLANTHUS SPHÆROÏDES.

This species, which I found tolerably abundant at Seaford, near Beachy Head, has, in expansion, the body lengthened and cylindrical, regularly striated longitudinally with fine transverse markings, the upper part sparingly covered with sucking-glands, not arranged in any definite order. Disk flat and even, but little exceeding the diameter of the body. Tentacula numerous, in three or four irregular series, the inner one containing from nine to twelve; these are the longest, and measure, when fully extended, about half an inch, or two-thirds of the breadth of the disk; the outer row consists of from fifty to sixty tentacula of the same slender tapering form as the inner ones, but are one-third shorter, the other series being intermediate in size and number. The body tapers a little posteriorly and terminates with a rounded base, having a distinct central perforation. When closely contracted, the two ends of the body are nearly alike, and the animal assumes the appearance of a more or less flattened sphere or bead, the resemblance to which is much increased by the presence of the terminal orifices.

The colour of the body is a dirty-white, and the upper portion is generally covered with particles of sand or mud adherent to the sucking-glands surrounding that part, and which help to conceal the animal when contracted, as is found to be the case with *Act. crassicornis*, and probably other species under similar circumstances. The mouth opens transversely, and from it very delicate white lines radiate



to the bases of the tentacula, interspersed with two or three shades of brown in the form of stripes or spots: in some specimens a circle of very pale spots with darker margins surrounds the mouth. The base of each tentaculum is very dark and is surmounted by a broad band of white or buff, the upper portion shading off to a clear pale pelucid brown, on which are three narrow distinct white rings, their breadth and the interspaces diminishing rapidly as they approach the tip. These animals are capable of assuming a great variety of shapes, and even when fully expanded sometimes elongate themselves to the extent of  $1\frac{1}{2}$  inch, or contract to little more than a  $\frac{1}{4}$  of an inch. They feed readily in confinement; but those that had buried themselves in the sand appeared best able to secure their prey when placed within reach, the others on the surface often tumbling over in their endeavours to get the food into a proper position for swallowing, from not having the support of the surrounding sand or mud natural to them when buried. They were all found near low water-mark, imbedded in the fine chalky mud which fills the crevices of the rocks at Seaford, their expanded disks being just level with the surface, but so nearly covered that only a faint star-like outline was visible; on being touched they instantly disappeared; and so great was their power of inversion and contraction, that on digging carefully, they were generally found about  $1\frac{1}{2}$  inch deep, and having that peculiar bead-like form which has suggested the specific name of *sphæroïdes*. There was usually a depth of 6 or 7 inches of mud below them, so that they could not have been fastened to the rock; and since I have had them at home, now nearly five weeks, they have not shown the least inclination to attach themselves to the gravel, or glass sides of the tank in which they are living; three of them have burrowed into some sand on which they were placed, but the others remain on the surface, and are but rarely contracted. Soft mud is probably their natural habitat, being the most easily penetrated, and I could find no traces of any of these animals in a considerable tract of sand only a few yards from the locality whence these were obtained.

June 12, 1855.—W. Yarrell, Esq., in the Chair.

ON TWO NEW SPECIES OF HUMMING BIRDS.

BY JOHN GOULD, F.R.S.

I bring before the notice of the Meeting two species of beautiful Humming Birds, which I believe to be new to science: they belong to that section of the *Trochilidæ* to which the generic appellation of *Heliothrix* has been given; of this form only three species have been previously characterized, namely *H. auritus*, *H. auriculatus*, and *H. Barroti*. One of these new species, for which I propose the specific name of *purpureiceps*, is nearly allied to *H. Barroti*, but differs from that bird in having a much shorter bill, in the blue of the head being of a paler purple, and in that hue not being confined to the crown, but extending some distance down the nape of the

neck. This species was obtained from the districts near Popayan. The second species, for which I propose the name of *phaïnolema*, has several characters in common with *H. auritus* and *H. auriculatus*; it differs, however, from both those species in the beautiful metallic-green colouring extending over the throat and front, as well as the sides of the throat. The two species may be described as follows:—

#### HELIOTHRIX PURPUREICEPS.

Male: Forehead, crown and nape beautiful purplish-blue; upper surface, upper tail-coverts, and upper and under wing-coverts beautiful golden-green; mark below the eye and ear-coverts black, terminating in a small blue tuft; below the black a streak of rich luminous green; wings purplish-black; central tail-feathers bluish-black; lateral tail-feathers, chin, throat, and under surface, pure white; bill black; feet flesh-colour.

Total length,  $4\frac{1}{8}$  inches; bill,  $\frac{5}{8}$ ; wing,  $2\frac{1}{2}$ ; tail,  $1\frac{3}{4}$ .

*Hab.* Popayan.

#### HELIOTHRIX PHAÏNOLEMA.

Male: Head, upper surface, upper tail-coverts, upper and under wing-coverts rich golden-green, very brilliant on the head; wings purplish-black; four central tail-feathers bluish-black; lateral tail-feathers snowy-white; below and behind the eye a lengthened mark of black, terminating in a violet-blue tuft; chin, throat and sides of the neck rich luminous green; breast and under surface pure white; bill black; feet flesh-colour.

Total length,  $4\frac{1}{2}$  inches; bill, 1; wing,  $2\frac{3}{8}$ ; tail,  $1\frac{7}{8}$ .

*Hab.* River Napo.

#### BOTANICAL SOCIETY OF EDINBURGH.

March 1856.—Dr. Greville, Secretary, in the Chair.

The following papers were read:—

1. "Notes on the Flora of Perth," by Dr. W. Lauder Lindsay.

"The most interesting plants of the district are probably *Scheuchzeria palustris*, *Moneses grandiflora*, *Teucrium Chamædrys*, and *Turritis glabra*; but the following also are noteworthy: *Coralorrhiza innata*, *Epipactis latifolia*, *Cephalanthera grandiflora* and *C. ensifolia*, *Neottia Nidus-Avis*, *Paris quadrifolia*, *Erigeron alpinus*, *Trientalis europæa*, *Adoxa moschatellina*, *Leonurus Cardiaca*, *Scrophularia vernalis*."

2. "On the occurrence of *Cladophora repens* (J. Agardh) at Malahide, Co. Dublin," by A. C. Maingay.

From the specimen now shown, it appears that Mr. W. M'Calla found this plant in Ireland in 1841, and therefore that to him is due the credit of having first collected it in this country, although he